



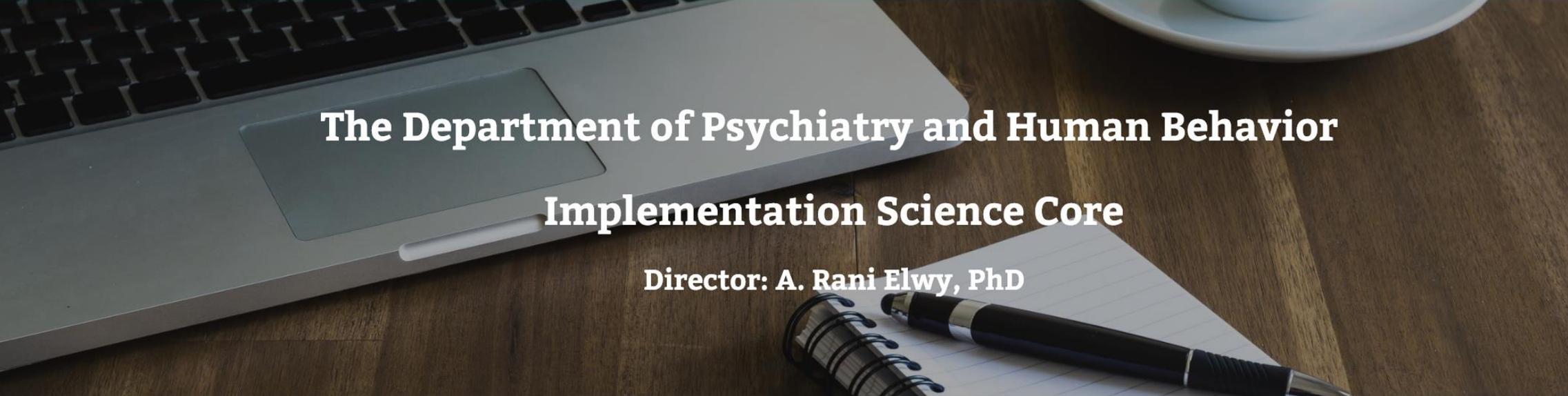
How to Plan for and Assess Sustainability of Evidence-Based Practices

A. Rani Elwy, PhD

Implementation Science Seminar Series

November 2, 2021





The Department of Psychiatry and Human Behavior Implementation Science Core

Director: A. Rani Elwy, PhD

Welcome to the Implementation Science Core Training Series!

This site provides information on the 6-week D&I series offered each semester, as well as information on each of the D&I workshops offered at various points throughout the year. Please click on the relevant course below to access readings (click on the image, and then click on the icon to open in a new tab). Powerpoint slides will be posted after the class or workshop; if you need these in advance, please let Rani know.

<https://sites.google.com/brown.edu/implementation-science-core/home>

Seminar Series

Advance-CTR offers a dynamic line-up of research talks and topic-area discussions from clinical and translational investigators and experts in Rhode Island, and beyond.

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+ Translational Research Seminar Series

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A graphic for the Implementation Science Seminars. It features a yellow central box with the text "Implementation Science Seminars" in bold black font. Above the box, it says "FALL 2021" three times. Below the box are logos for Brown Medical School, Advance-CTR, and IRch. To the right is a white text box with the title "New Lecture Series" and the text "Announcing six Implementation Science Seminars this Fall, on Tuesdays from 10-11 am ET, between November 2 and December 7." Below this text is a "FIND OUT MORE" button with a right-pointing arrow. Navigation arrows are visible in the top right corner of the white box.

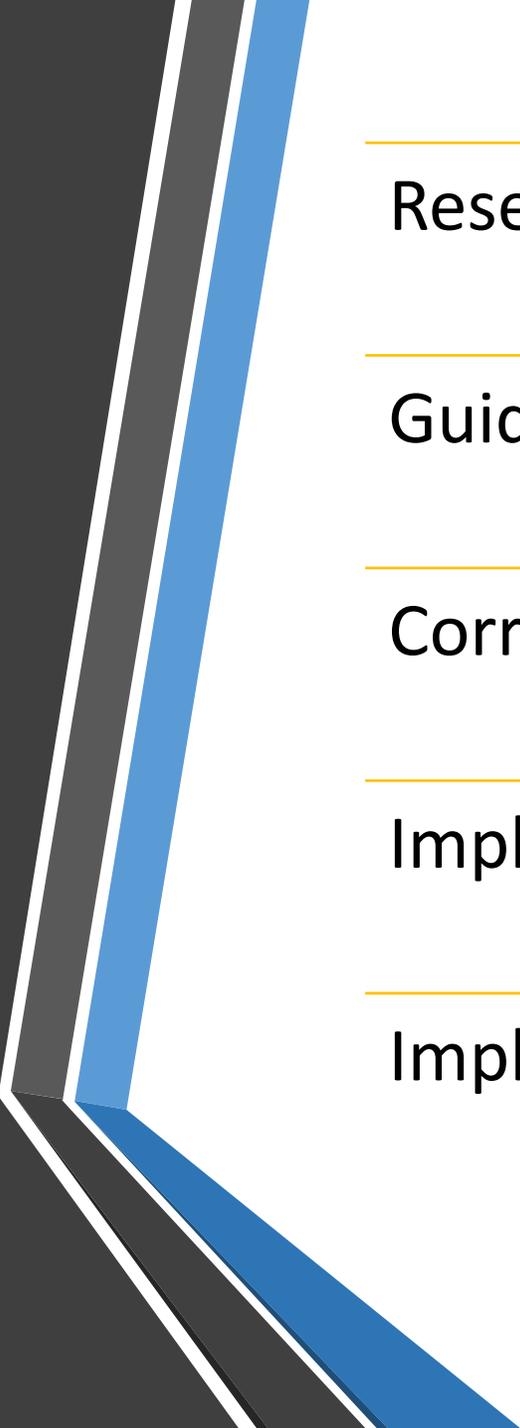
<https://advancectr.brown.edu/events-training/seminar-series>

Implementation: the scientific study of methods to promote the systematic uptake of research findings and other EBPs into routine practice, and, hence, to improve the quality and effectiveness of health services (Bauer et al, 2015)

Dissemination: an active approach of spreading evidence-based interventions to the target audience via determined channels using specific strategies (Rabin and Brownson 2018)

D&I Definitions

Main D&I Concepts



Research questions

Guided by Theories/Models/Frameworks

Corresponding Study Designs

Implementation Strategies

Implementation Outcomes

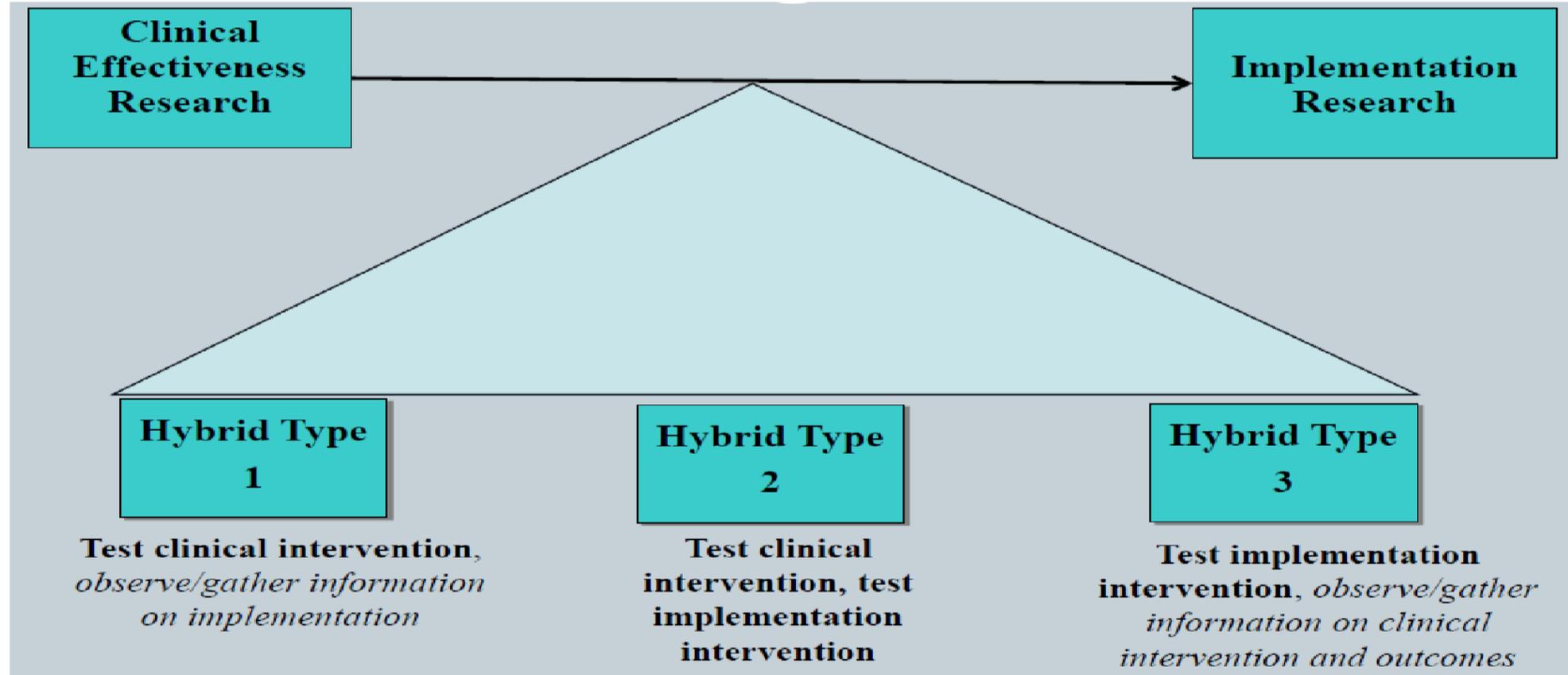
“Planning for Sustainability”

Chambers, Glasgow, Stange, 2013



| Term | Definition |
|----------------|---|
| Implementation | The process of putting to use or integrating evidence-based interventions within a setting [9]. |
| Sustainability | To what extent an evidence-based intervention can deliver its intended benefits over an extended period of time after external support from the donor agency is terminated [9]. |
| Sustainment | The continued use of an intervention within practice [10]. |
| Voltage drop | The phenomenon in which interventions are expected to yield lower benefits as they move from efficacy to effectiveness and into real world use (adapted from [11]). |
| Program drift | The phenomenon whereby deviation from manualized protocols in real-world delivery of interventions is expected to yield decreasing benefit for patients (adapted from [12]). |

Hybrid Designs: 1, 2, 3



Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Med Care. 2012; 50(3):217-26.



ABOUT RE-AIM

This site provides an explanation of and resources for those wanting to apply the RE-AIM framework. The RE-AIM framework is designed to enhance the quality, speed, and public health impact of efforts to translate research into practice in five steps:

- [Reach](#) your intended target population
- [Efficacy](#) (or more often effectiveness)
- [Adoption](#) by target staff, settings, systems or communities
- [Implementation](#) consistency, costs, and adaptations made during delivery
- [Maintenance](#) of intervention effects in individuals and settings over time

[About RE-AIM – RE-AIM \(re-aim.org\)](https://re-aim.org)

An Extension of RE-AIM to Enhance Sustainability: Addressing Dynamic Context and Promoting Health Equity Over Time

Rachel C. Shelton^{1*}, David A. Chambers² and Russell E. Glasgow^{3,4}

doi: 10.3389/fpubh.2020.00134

Sustainability Considerations:

Who isn't reached by the EBI? (Reach)

Does the EBI continue to be effective at various time points over time? (Effectiveness)

Which settings/staff continue to deliver the EBI over time? (Adoption)

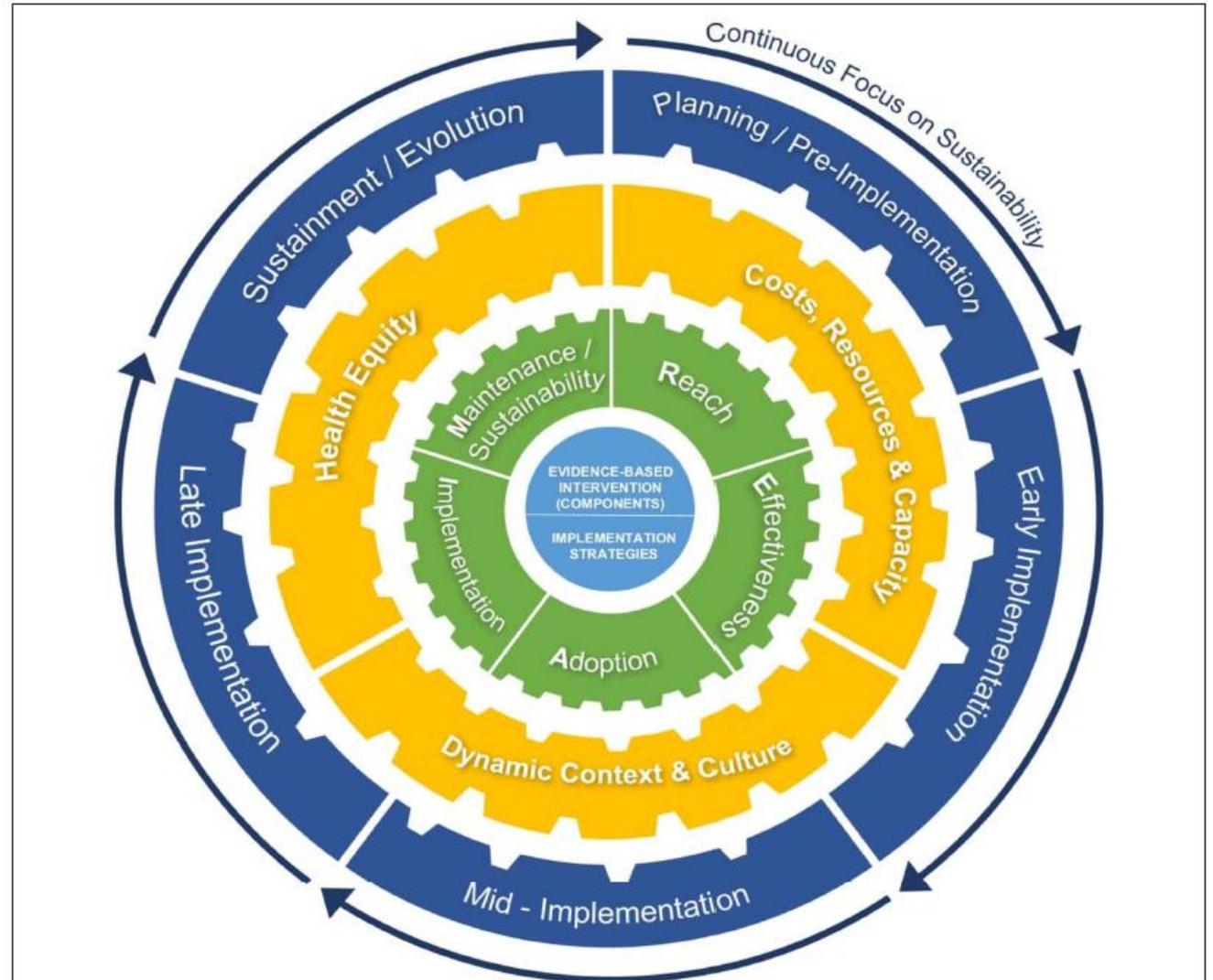


FIGURE 1 | An extension of RE-AIM to enhance sustainability: Cross-cutting issues and iterative application of RE-AIM for sustainability, to guide adaptations and evolvability of EBIs/implementation strategies, address dynamic context, and promote equity across the life cycle of an EBI.



ELSEVIER

Contents lists available at [ScienceDirect](#)

Healthcare

journal homepage: www.elsevier.com/locate/healthcare



Case report

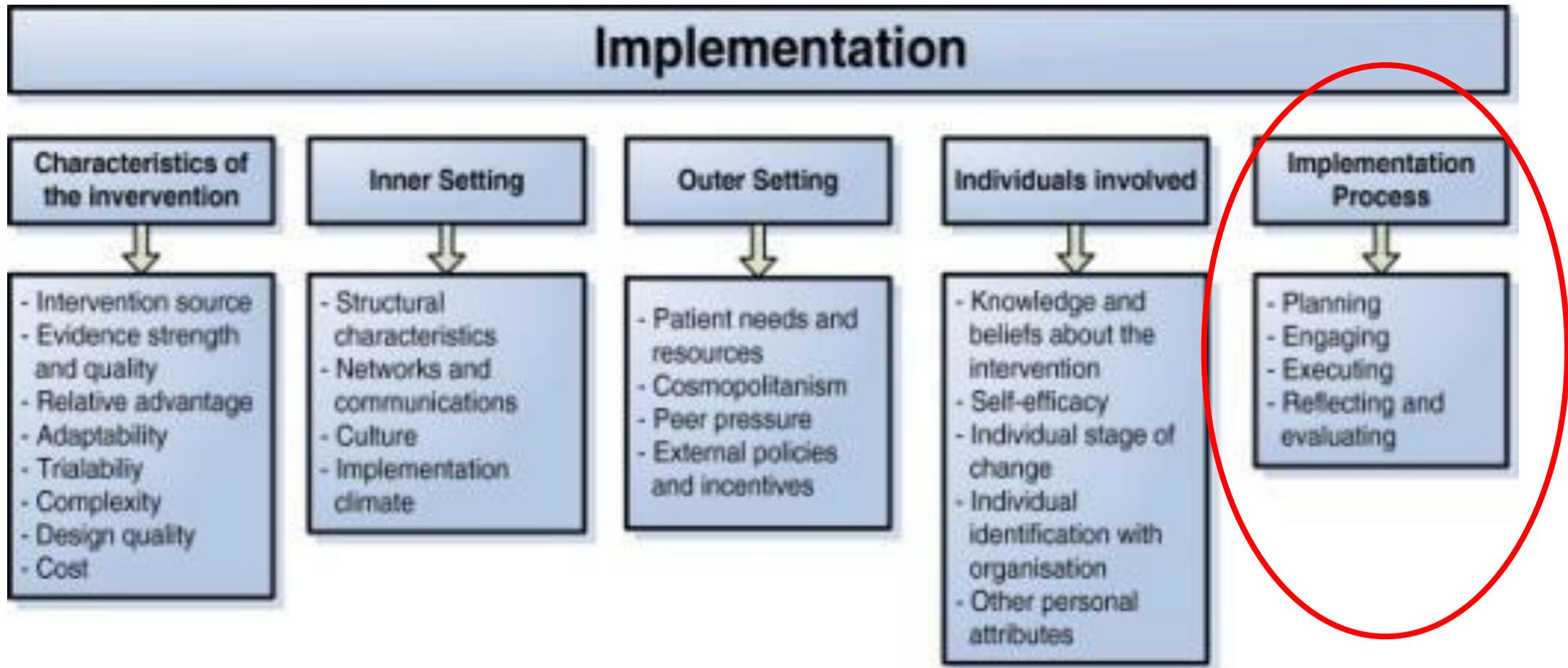
From implementation to sustainment: A large-scale adverse event disclosure support program generated through embedded research in the Veterans Health Administration[★]

A. Rani Elwy^{a,b,c,*}, Elizabeth M. Maguire^a, Megan McCullough^{a,1}, Judy George^d,
Barbara G. Bokhour^{a,r}, Janet M. Durfee^e, Richard A. Martinello^{f,g}, Todd H. Wagner^{h,i},
Steven M. Asch^{h,j}, Allen L. Gifford^{d,k}, Thomas H. Gallagher^l, Yuri Walker^m,
Virginia A. Sharpeⁿ, Cynthia Geppertⁿ, Mark Holodniy^{o,p}, Gavin West^q

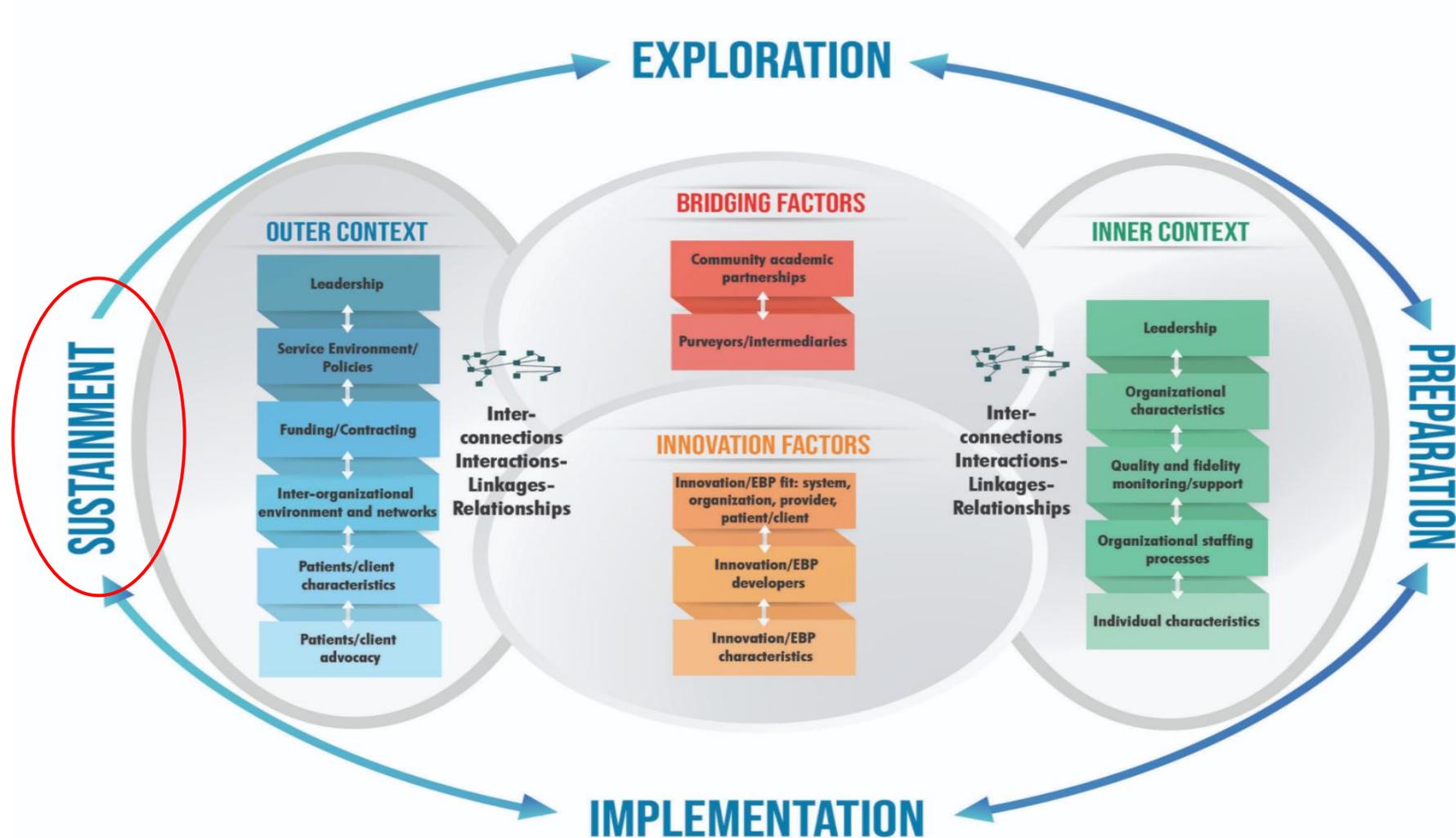


<https://www.sciencedirect.com/science/article/pii/S2213076420300956>

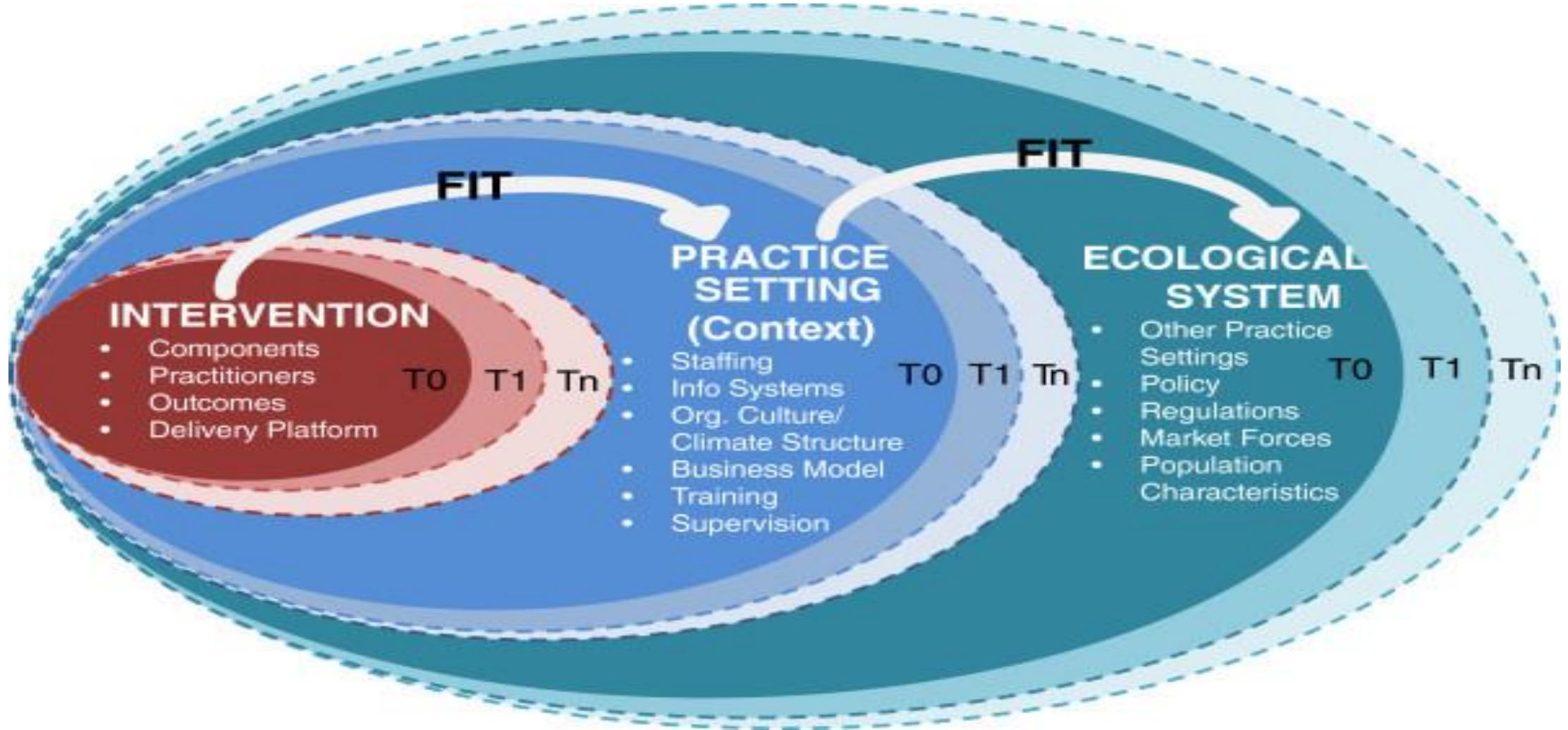
Consolidated Framework for Implementation Research



Exploration, Preparation, Implementation, Sustainment (EPIS) Framework



The Dynamic Sustainability Framework



Term**Definition**

Implementation

The process of putting to use or integrating evidence-based interventions within a setting [9].

Sustainability

To what extent an evidence-based intervention can deliver its intended benefits over an extended period of time after external support from the donor agency is terminated [9].

Sustainment

The continued use of an intervention within practice [10].

Voltage drop

The phenomenon in which interventions are expected to yield lower benefits as they move from efficacy to effectiveness and into real world use (adapted from [11]).

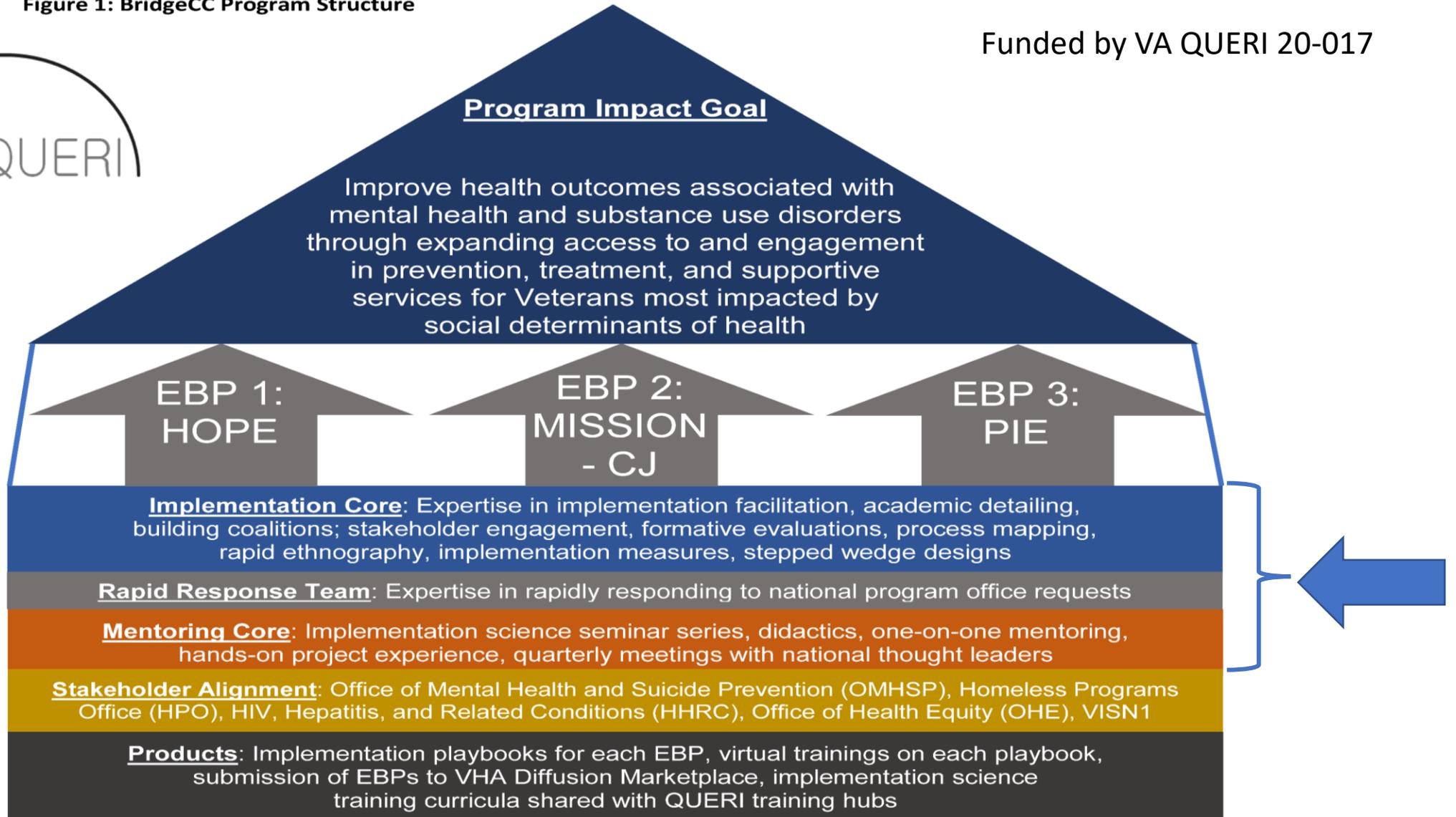
Program drift

The phenomenon whereby deviation from manualized protocols in real-world delivery of interventions is expected to yield decreasing benefit for patients (adapted from [12]).

Example of how to use the DSF

Figure 1: BridgeCC Program Structure

Funded by VA QUERI 20-017



Implementation Strategies Across all 3 EBP Projects

Strategy

Definition

**Implementation
Facilitation
(High Intensity)**

Bundles an integrated set of activities to support the uptake of effective healthcare practices, such as engaging stakeholders, identifying champions, action planning, staff training, problem-solving, providing technical support, audit/feedback, etc.

**Education
Outreach
/Academic
Detailing
(Low Intensity)**

Targeted, structured visits by trained personnel to health care practices for the purpose of delivering tailored training and technical assistance to health care providers and staff to help them use the EBP



Hybrid 3
Trial

Kilbourne et al, Quality Enhancement Research Initiative Implementation Roadmap,
Medical Care: October 2019 - Volume 57 - Issue - p S286-S293

Implementation Approaches by QUERI Implementation Roadmap Phase, Guided by the Dynamic Sustainability Framework

Roadmap Phase

Bridge QUERI Implementation Core Methods and Expertise

Pre-Implementation

- Formative qualitative interviews conducted with key informants,
- Process mapping of clinical workflow and community practices, create adaptations of EBPs
- Assessment of key implementation factors at baseline, : acceptability, appropriateness, feasibility; organizational readiness

- Example products: Curricula and training guides for implementation of each of our EBPs.

Implementation

- Training on core components of EBPs and fidelity-consistent modifications
- Training on specification and operationalization of implementation strategies
- Assess effectiveness (linkage to care, incarceration and overdose rates)

Example Products: Activity logs and cost collection tools adapted for each EBP (micro-costing techniques, time and activity checklists, key events template; contributing to our business case).

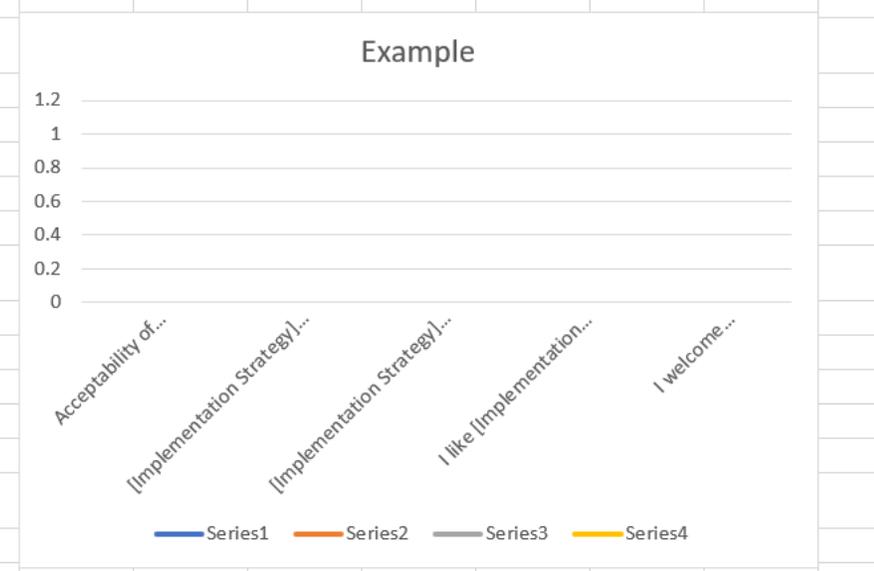
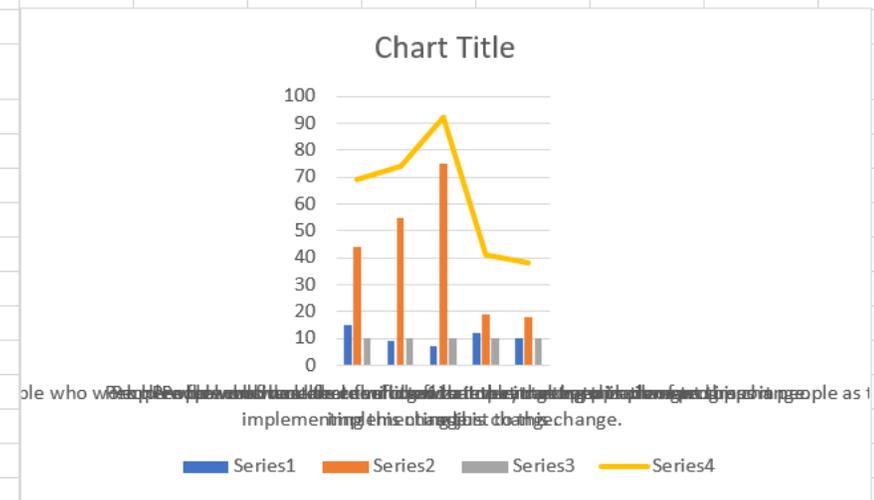
Sustainability

- Identify remaining implementation barriers at sites and assist local teams (Assessing fit, DSF).
- Costs, (Costs of Implementing New Strategies from the Stages of Implementation Completion)
- Sustainment Measurement System Scale and Provider Report of Sustainment Scale

Example Products: Implementation Playbooks to enable other sites to adopt and implement the EBPs, including a guide to developing and sustaining community-based partnerships.

Assessing Fit with DSF: Intervention and Practice Setting

| | HOPE | MISSION-CJ | PIE | TOTAL |
|--|------|------------|-----|-------|
| Organizational Readiness for Implementing Change (ORIC) | | | | |
| 1 | | | | |
| 2 | | | | |
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Summary of EBP Effectiveness Outcomes

| Outcome | Measure | Data Source |
|--|---|--|
| Veterans' knowledge about opioid overdose and naloxone | Brief Opioid Overdose Knowledge (BOOK) | Staff administered survey before/after visit |
| Overdose rate | % with overdose event | CDW |
| Criminal Recidivism | # of jail/prison days | VINELink |
| Linkage to VA MH care | # of MH outpatient visits | CDW |
| Linkage to VA SUD care | # of outpatient SUD visits | CDW |
| Linkages to permanent housing | % w/ placement in HUD-VASH | HOMES |
| Linkage to VA/non-VA homeless health, behavioral health & social services | % with referrals to non-VA, health, behavioral health and social services | HOMES/CDW/Fidelity measure/activity logs |

Assessing Fit with DSF:
Ecological System (Costs)

Costs of
Implementing
New Strategies
(COINS)



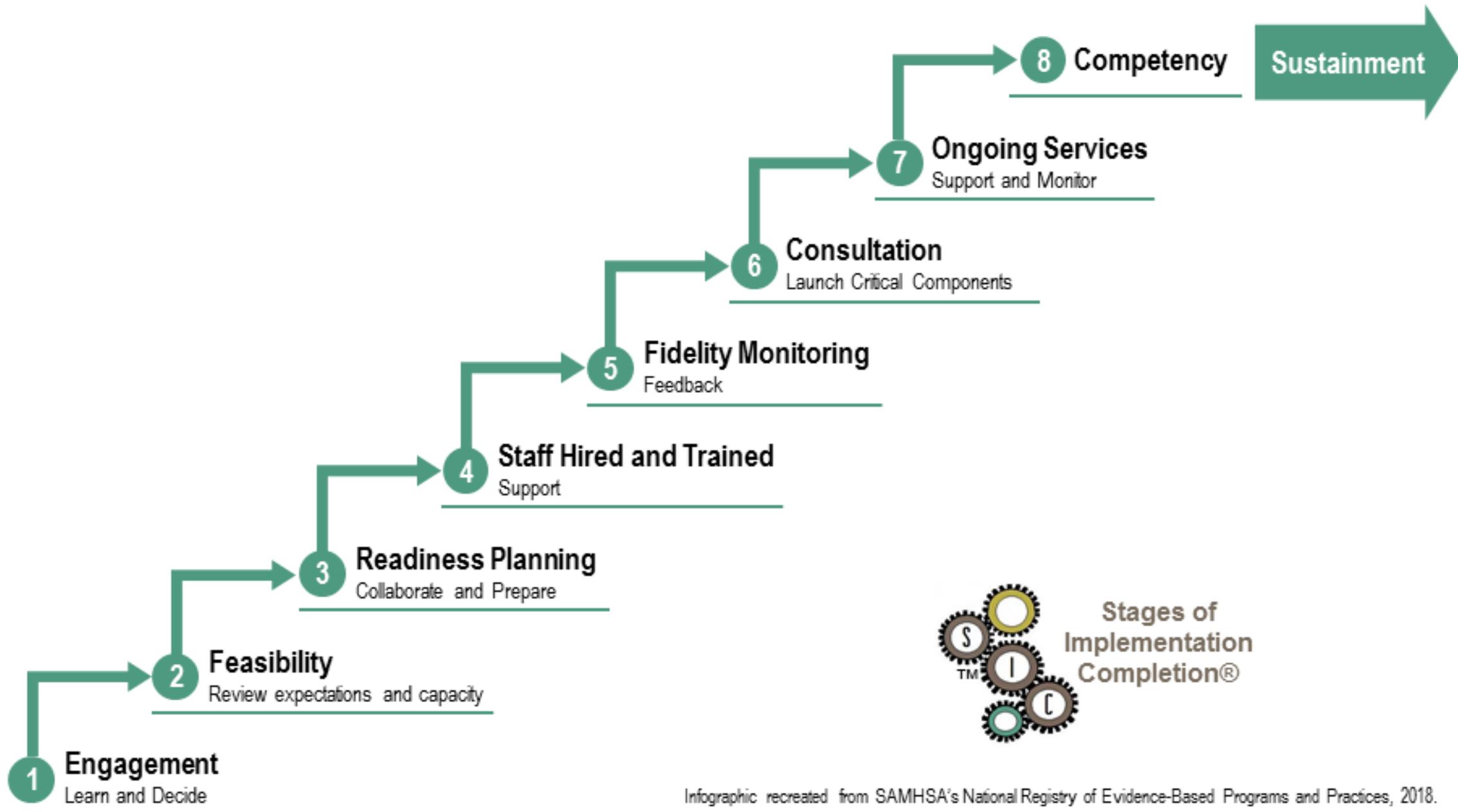
SCIENTISTS UPDATES

Stages of Implementation Completion (SIC)

Based on Research Conducted at OSLC

WE KNOW LITTLE ABOUT HOW TO ACHIEVE SUCCESSFUL IMPLEMENTATIONS WHEN INTERVENTIONS ARE ROLLED OUT INTO COMMUNITY SETTINGS. THE STAGES OF IMPLEMENTATION COMPLETION (SIC) WAS EXAMINED IN COLLABORATION WITH DEVELOPERS OF THREE EVIDENCE-BASED PRACTICES.

<https://www.oslc.org/projects/sic-stages-implementation-completion/>



Infographic recreated from SAMHSA's National Registry of Evidence-Based Programs and Practices, 2018.

Assessing Fit Over Time: Sustainment Measurement

Sustainability Assessment

Palinkas et al. *Implementation Science* (2020) 15:71
<https://doi.org/10.1186/s13012-020-01030-x>

Implementation Science

METHODOLOGY

Open Access

Measurement of sustainment of prevention programs and initiatives: the sustainment measurement system scale



Lawrence A. Palinkas^{1*} , Chih-Ping Chou², Suzanne E. Spear³, Sapna J. Mendon¹, Juan Villamar⁴ and C. Hendricks Brown⁴

Sustainment Measurement System Scale

Sustainment Indicators/Outcomes (Global Measure)

Likert scale ranging from 1 (not at all) to 5 (all the time)

The project continues to operate as described in the original application for funding.

The project continues to deliver prevention services to its intended population.

The project continues to deliver prevention services that are evidence-based.

This project periodically measures the fidelity of the prevention services that are delivered.

SMSS Determinant Factors

- 1. Funding and Financial Support**
- 2. Responsiveness to community needs**
- 3. Responsiveness to community values**
- 4. Coalitions, partnerships, and networks**
- 5. Organization capacity to support sustainment**
- 6. Organizational staff capacity to support sustainment**
- 7. Implementation leadership**
- 8. Evaluation, feedback, and evidence of positive outcomes**

Likert scale ranging from 1 (not at all) to 5 (all the time)

Lower scores on all subscales indicate lower levels of agreement, while higher scores indicate higher levels of agreement with the respective statements.

Each subscale score is represented as an average of the scores for each item included in the subscale.

RESEARCH

Open Access

Provider REport of Sustainment Scale (PRESS): development and validation of a brief measure of inner context sustainment



Joanna C. Moullin^{1,2}, Marisa Sklar^{2,3,4}, Mark G. Ehrhart⁵, Amy Green^{2,6} and Gregory A. Aarons^{2,3,4*} 

Glasgow and Riley 2013 Pragmatic Measures

Table 1 Required and recommended criteria for pragmatic measures

| Glasgow and Riley criteria | Provider REport of Sustainment Scale (PRESS) |
|---|---|
| Important to stakeholders | Items and constructs were reviewed by practitioners, supervisors, and other researchers before data collection |
| Burden is low for both respondents and staff | Measure is freely available and takes less than 5 min to complete |
| Actionable | Easy to score and interpret |
| Sensitive to change | Items are phrased to be sensitive to change and valid across the spectrum of sustainment |
| Broadly applicable | Can be used across different settings and EBPs |
| Use for benchmark, has norms to interpret, or addresses public health goals | Informs sustainment of a practice in specific settings so that norms can be developed and addresses public health |
| Unlikely to cause harm | No sensitive information collected |
| Psychometrically strong | Rasch Measurement Theory and Classical Test Theory support reliability and validity |
| Related to theory or model | Covers constructs of EPIS model and existing constructs and definitions of sustainment |

Table 2 Provider REport of Sustainment Scale (PRESS)

*The following questions ask about [EBP] in your [setting].
Please indicate the extent to which you agree with the following items*

1. Staff use [EBP] as much as possible when appropriate
 2. Staff continue to use [EBP] throughout changing circumstances
 3. [EBP] is a routine part of our practice
-

Anchors 0 = not at all, 1 = to a slight extent, 2 = to a moderate extent, 3 = to a great extent, and 4 = to a very great extent



Welcome to the online Program Sustainability Assessment Tool.

Let us help you rate the sustainability capacity
of your program across a range of factors.

[GET STARTED](#)





Assess Sustainability

The online Program Sustainability Assessment Tool allows you to:

- Rate your program across the 8 Sustainability domains.
- View an automated summary Sustainability Report of your results.

[ASSESS AS AN INDIVIDUAL](#)

[ASSESS AS A GROUP](#)

Program Sustainability Assessment Tool

- 40 item self-assessment that program staff and stakeholders can take to evaluate the sustainability capacity of a program
- Sustainability capacity = the ability to maintain programming and its benefits over time
- Complete online assessment, receive an automated summary report of your overall sustainability
- Use these results to engage in sustainability planning

https://sustaintool.org/wp-content/uploads/2016/12/Sustainability-ToolV2_w-scoring_12.11.13.pdf

Assessing a program/set of activities on:

1. **Environmental support**

Having a supportive internal and external climate for your program

2. **Funding stability**

Establishing a consistent financial base for your program

3. **Partnerships**

Cultivating connections between your program and its stakeholders

4. **Organizational capacity**

Having the internal support and resources needed to effectively manage your program and its activities

5. **Program evaluation**

Assessing your program to inform planning and document results

6. **Program adaptation**

Taking actions that adapt your program to ensure its ongoing effectiveness

7. **Communications**

Strategic communication with stakeholders and the public about your program

8. **Strategic planning**

Using processes that guide your program's direction, goals, and strategies

Program Sustainability Assessment Tool v2

Rating Instructions

Once you have completed the Program Sustainability Assessment Tool, transfer your responses to this rating sheet to calculate your average scores. Please record the score for each item (1-7), or write “NA” if you were not able to answer.

| | | DOMAIN | | | | | | | |
|-------------|----------------------------------|--------------------|-------------------|--------------|-------------------------|--------------------|--------------------|----------------|--------------------|
| | | Envirmntl. Support | Funding Stability | Partnerships | Organizational Capacity | Program Evaluation | Program Adaptation | Communications | Strategic Planning |
| ITEM | 1. | | | | | | | | |
| | 2. | | | | | | | | |
| | 3. | | | | | | | | |
| | 4. | | | | | | | | |
| | 5. | | | | | | | | |
| | Domain Total: | | | | | | | | |
| | Average Score for Domain: | | | | | | | | |
| | Overall Score: | | | | | | | | |

Add up your scores in each column. Exclude 'NA'

Divide the domain total by the total number of items with a score. Exclude 'NA'

Average together all the domain scores

Use these results to guide sustainability action planning for your program. The domains with lower average scores indicate areas where your program’s capacity for sustainability could be improved.

[Name of Program] Sustainability Plan

Program Vision Statement: [Describe the final long term goal or vision of your program or initiative.]

Background: [Briefly summarize the history and current state of the program you wish to sustain.]

Current Funding Sources: [List the current funding sources for this program along with their expiration dates.]

Sustainability Results: [Summarize your program's strengths and areas for improvement identified in your results from the Program Sustainability Assessment Tool.]

Program Elements to be Sustained: [List the program elements that your team has decided to sustain. Refer to your evaluation data to see which program elements are most effective and essential.]

Partners: [List partners involved in the sustainability assessment and/or creation and implementation of the sustainability plan.]

Time Frame: [Enter the period of time over which the sustainability activities listed below will be implemented.]

Sample Sustainability Action Plans

We have developed examples of action plans for the Program Evaluation, Partnerships, and Communications domains. We hope these samples can give you some direction as you write your own plan.

| Program Evaluation: Assessing your program to inform planning and document results | | | | | | | |
|---|---|---|--|--|----|----|----|
| Sustainability SMART Objective: By January 2019, all consenting Program participants will be contacted to take survey evaluating outcomes of interest six months following program completion (in addition to surveys already administered upon baseline and Program completion). | | | | | | | |
| Steps to achieve objective: [Be very specific and include important sub-steps. Anyone should be able to pick up this document and understand what needs to happen in order to reach your objective.] | Who will do the work? [Who will ultimately ensure the work gets finished?] | What does success look like? [What metrics will you use to track progress on the completion of each step? How will you know it's time to move on to the next step?] | What non-financial resources are needed for this step? Where will they come from? | Due date [In the appropriate quarter, enter a specific date by which the activity must be completed.] | | | |
| | | | | Q1 | Q2 | Q3 | Q4 |
| <p>1. Determine outcomes of interest and information needed from participants for six-month follow-up, as well as how the survey will be administered</p> <ul style="list-style-type: none"> • Research follow-up survey implementation best practices/consult knowledgeable staff • Review existing baseline and program completion survey content for continuity • Consider potential challenges (specifically in terms of contacting participants) and brainstorm solutions | <p>Evaluation and research team, insight/approval from leadership</p> | <p>Six-month evaluation needs are defined:</p> <ul style="list-style-type: none"> • What information should be collected? • How should information be collected? • How should anticipated challenges be addressed? | <p>Existing Program survey content and data, best practices literature regarding administrating follow-up survey</p> | Feb. 15, 2018 | | | |

Thank you and
Questions

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 @ranielwy



Extra Slides

Funding and Financial Support

1. The project is funded through non-profit, private, and/ or non-governmental sources.
2. The project has a combination of stable (i.e., earmarked) and flexible (i.e., discretionary) funding.
3. The project has sustained funding.
4. Diverse community organizations are financially invested in the success of the project.
5. The project is financially solvent



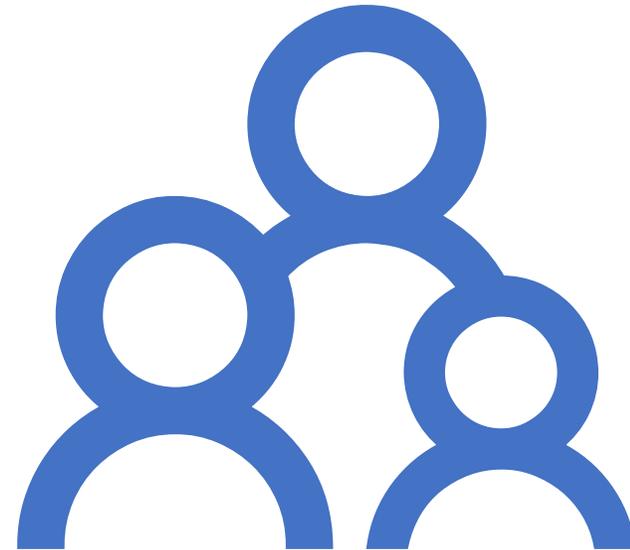
Responsiveness to Community Needs

1. The project delivered meets the needs of the intended target populations.
2. The project addresses the behavioral health needs of the communities/populations being served.



Responsiveness to Community Values

1. The project can be adapted to meet the needs of the communities or populations being served.
2. The project is consistent with the norms, values and guiding principles of participating organizations.
3. The project fits well with the values of the organization(s) responsible for sustaining it and the communities where it is being sustained.



Coalitions, Partnerships, and Networks

The community members are passionately committed to sustaining the project.

The community is actively engaged in the development of project goals.

The community has access to knowledge and information about the project.

The project is supported by a coalition/partnership/ network of community organizations.

Coalition/partnership/network members actively seek to expand the network of community organizations, leaders, and sources of support for this project.

The coalition/partnership/network is committed to the continued operation of this project.

There is a high level of networking and communication within the organizations responsible for sustaining the project.

Community leaders are actively involved in the project

Infrastructure and Capacity to Support Sustainment

The project exhibits sound fiscal management.

The project is well integrated into the operations of the organization and its partners.

Plans for implementing and sustaining the project are developed in advance.

The project is carried out or accomplished according to those plans.

The project offers sufficient training to agency staff and community members.

Staff possesses adequate knowledge and supportive beliefs about the project.

Staff feel themselves to be capable of implementing the project.

Implementation Leadership

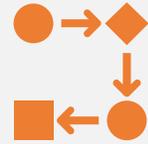
The project has a formally appointed person responsible for coordinating the process of implementing and sustaining the project.

The project is also supported by a champion who is actively engaged in the process of implementing and sustaining the project.

We have a process in place to sustain the project in the event our champion leaves.



Evaluation, Feedback, and Evidence of Positive Outcomes



There is ongoing evaluation of progress made towards sustainment.



There is sufficient and timely feedback about the project delivery to maintain or improve quality.



The project provides strong evidence of positive outcomes.

Table 5 Mean individual and global sustainment outcomes and sustainment determinants by current program funding

| Construct | Currently funded by SAMHSA grant initiative | |
|--|---|------------------|
| | Yes | No |
| Outcome | (<i>n</i> = 137) | (<i>n</i> = 18) |
| Continue to operate as described in original application | 4.45 (0.72) | 3.56 (1.10)*** |
| Continue to deliver preventive services to intended population | 4.80 (0.56) | 3.83 (1.10)*** |
| Continue to deliver evidence-based services | 4.65 (0.71) | 3.78 (1.26)*** |
| Periodically measure fidelity of services delivered | 4.23 (1.03) | 2.94 (1.55)*** |
| Global sustainment | 4.53 (0.56) | 3.53 (1.14)*** |
| Determinant | (<i>n</i> = 113) | (<i>n</i> = 15) |
| Financial stability | 2.70 (0.99) | 2.67 (1.03) |
| Responsiveness to community needs | 4.53 (0.56) | 4.13 (1.08)* |
| Responsiveness to community values | 4.73 (0.39) | 4.76 (0.53) |
| Coalitions, partnerships, and networks | 4.19 (0.70) | 3.60 (1.33)** |
| Organizational capacity | 4.32 (0.64) | 4.16 (0.86) |
| Organizational staff capability | 4.62 (0.53) | 4.14 (1.22)** |
| Implementation leadership | 4.12 (0.76) | 3.89 (1.00) |
| Evaluation, feedback, & program outcomes | 4.11 (0.69) | 3.42 (1.11)** |

p* < 0.05, *p* < 0.01, ****p* < 0.001

Table 6 Mean individual and global sustainment outcomes and sustainment determinants by current program status

| Construct | Continues to exist but adapted | Continues to exist in sam |
|--|--------------------------------|---------------------------|
| Outcome | <u>(n = 55)</u> | <u>(n = 125)</u> |
| Continue to operate as described in original application | 4.00 (0.94) | 4.53 (0.70)*** |
| Continue to deliver preventive services to intended population | 4.40 (0.95) | 4.81 (0.52)*** |
| Continue to deliver evidence-based services | 4.24 (1.09) | 4.69 (0.65)*** |
| Periodically measure fidelity of services delivered | 3.71 (1.49) | 4.29 (0.97)** |
| Global sustainment | 4.09 (0.99) | 4.58 (0.51)*** |
| Determinant | <u>(n = 51)</u> | <u>(n = 96)</u> |
| Financial stability | 2.80 (1.17) | 2.49 (0.96) |
| Responsiveness to community needs | 4.48 (0.76) | 4.48 (0.57) |
| Responsiveness to community values | 4.72 (0.45) | 4.73 (0.38) |
| Coalitions, partnerships, and networks | 4.05 (1.05) | 4.13 (0.67) |
| Organizational capacity | 4.19 (0.84) | 4.26 (0.68) |
| Organizational staff capability | 4.41 (0.87) | 4.65 (0.50)* |
| Implementation leadership | 4.16 (0.98) | 4.00 (0.74) |
| Evaluation, feedback, & program outcomes | 4.01 (0.91) | 4.10 (0.65) |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$